

Major Coastal Storm for Late Sunday into Monday

Decision Support Briefing #3

As of: 600 PM Dec 16, 2023

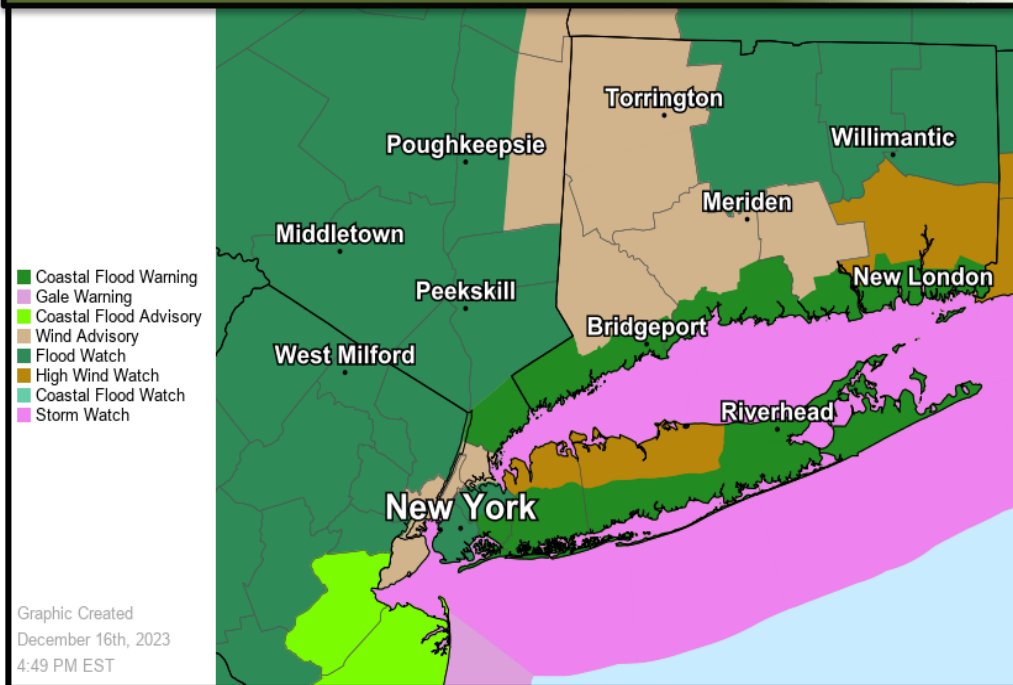
What Has Changed?

- ✓ Flood Watch issued for all but Long Island and New London County Sun aft thru Mon aft.
- ✓ Coastal Flood Warnings and Watches issued for most for the coast for the Monday afternoon high tidal cycle.

Key Messages

- ✓ Widespread minor urban, poor drainage and riverine flood threats likely for late Sunday thru Monday morning.
- ✓ Threat for minor to moderate flooding of quick responding rivers. Moderate to major possible for a few spots.
- ✓ Widespread moderate coastal flooding expected for much of the coast Monday afternoon high tide. Locally major possible.
- ✓ Widespread dune erosion and scattered overwashes possible for the ocean beachfront.
- ✓ Strong to damaging winds for the coast late Sunday Night into Monday.
- ✓ Storm conditions likely on all waters Sunday Night through Monday.

Current Hazards



Heavy Rain and Flash Flood Potential



Current Convective and Flood Watches



Graphic Created
December 16th, 2023
3:49 PM CST

Forecast Challenges:

- ✓ Streamflows are generally running around the 75th percentile, with slightly above normal soil moisture increasing the threat for flood impacts.
- ✓ Heavy rainfall and runoff coinciding with times of high tide Sunday overnight and early Monday afternoon will likely exacerbate flood impacts along the coast and tidally affected river basins.

Hazards:

- ✓ **Storm Total Rainfall:** Entire Area
 - ✓ 2 to 3" likely, locally 4" amounts possible
 - ✓ Highest amounts favored across the interior
 - ✓ Much of this will fall over 12 hours Sun Eve into Mon Morn
- ✓ **Rainfall Rates:**
 - ✓ Generally $\frac{1}{4}$ to $\frac{1}{2}$ "/hr for a 6 to 8 hr period late Sun Night into Mon Morn

Impacts:

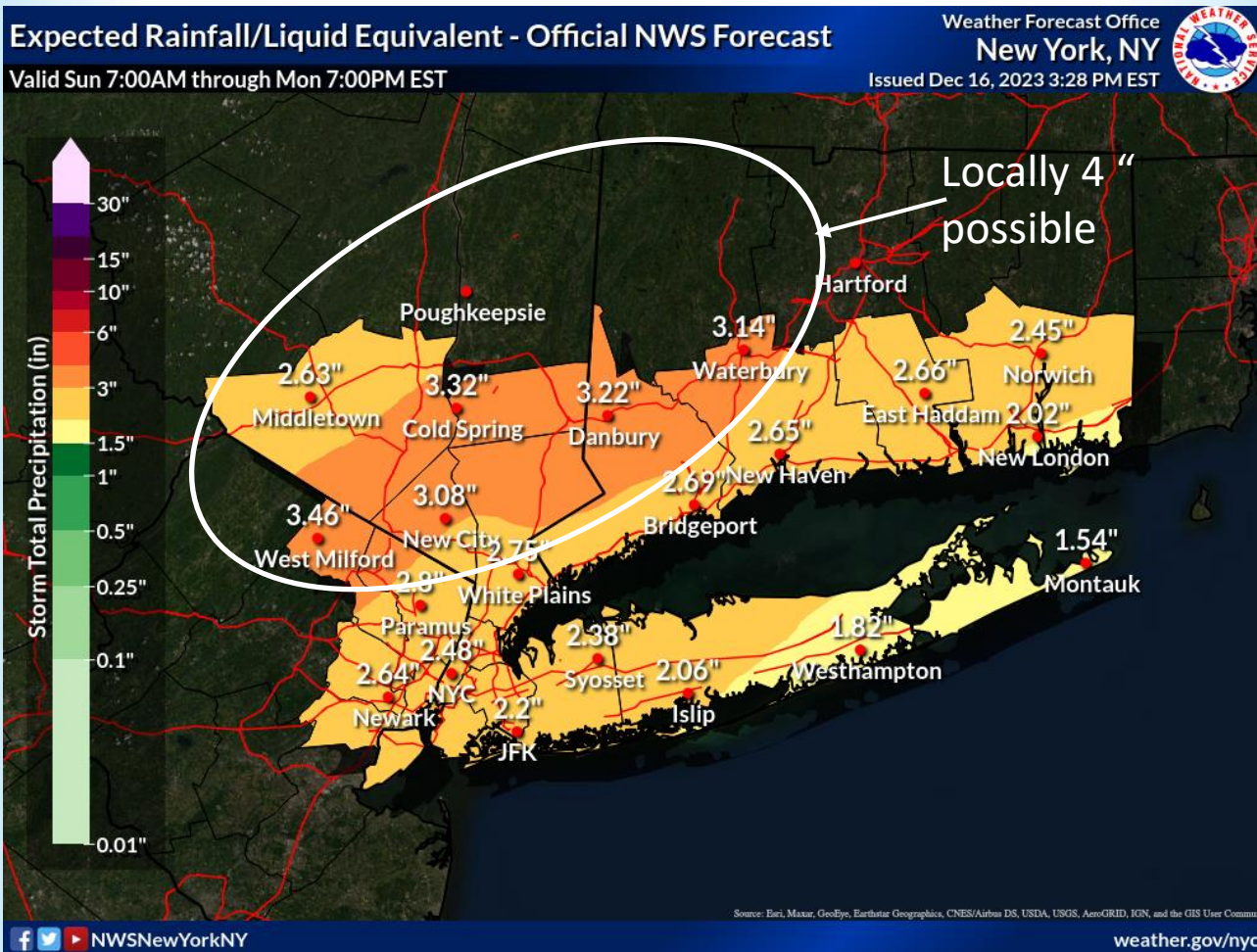
- ✓ **Widespread minor urban and poor drainage flooding likely. Localized to scattered flash flooding possible.** This may cause some disruptions to transportation, and isolated flooding of basements, first floors of residences and businesses, as well as some underground infrastructures.
- ✓ **Minor to moderate flooding likely along several quick responding small rivers and streams of NE NJ and Lower Hudson Valley.**
Reasonable worst case scenario of moderate to major flooding for a few quick responding rivers, particularly in NE NJ if greater than 3 1/2" of rainfall is realized.
- ✓ **Significant rises expected along large stem rivers** with minor flooding possible across a few areas river Monday into Tuesday.
- ✓ **Heavy rainfall and runoff may coincide with times of high tide Sunday overnight and early Monday afternoon, exacerbating flood impacts along the coast and tidally affected river basins.**

Timing:

- ✓ Heaviest rainfall and impacts late Sunday Evening thru Monday morning



Official Rainfall Forecast

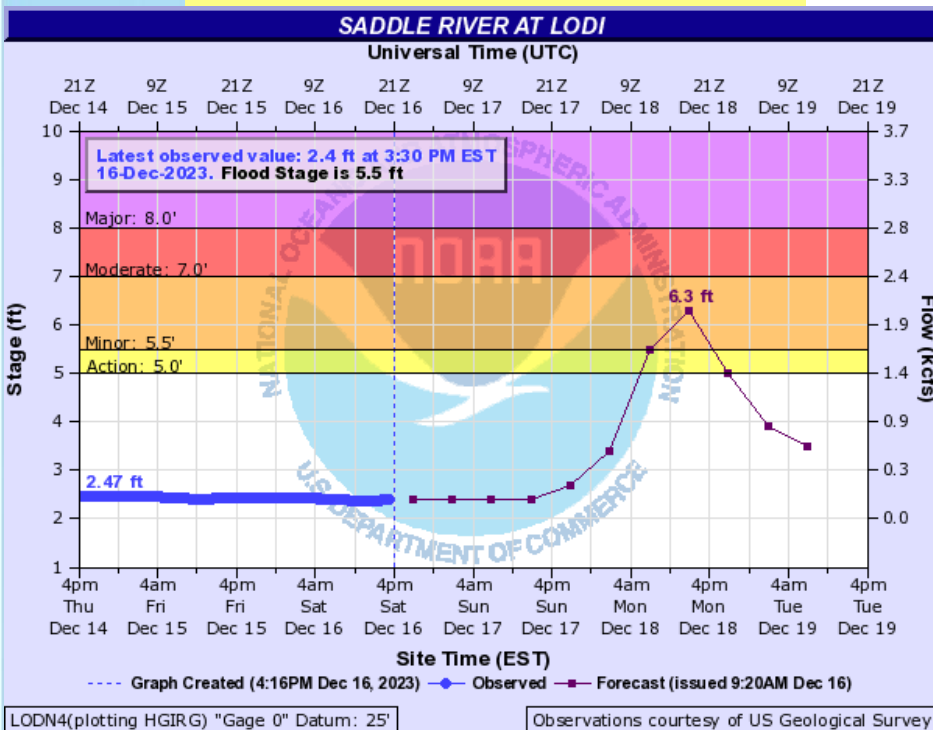


Northeastern NJ River Flooding Potential

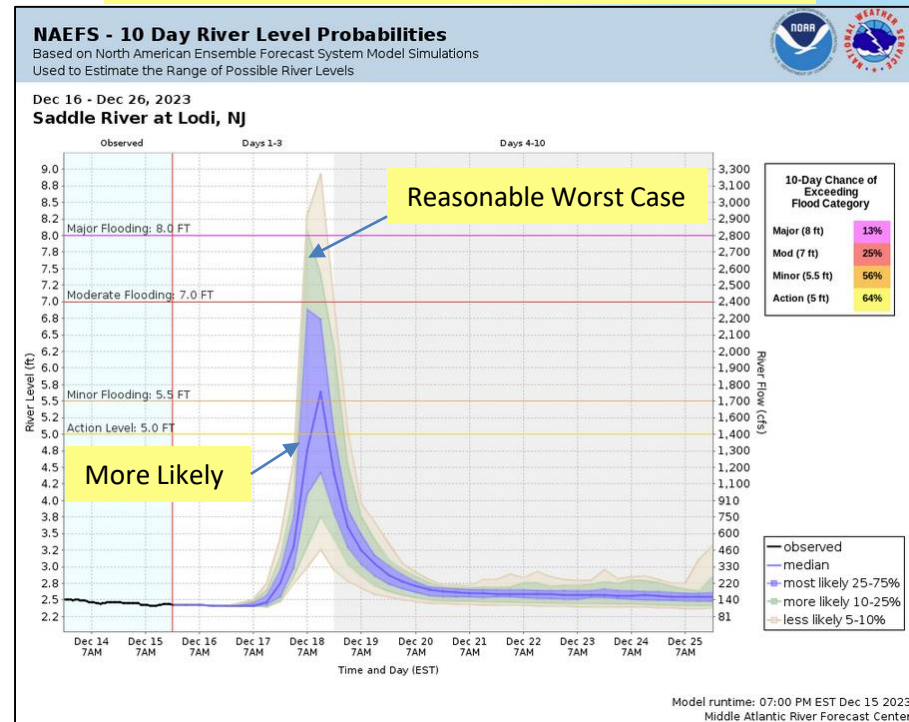
- ✓ **Minor to moderate flooding likely along several quick responding small rivers and streams of NE NJ.**
- ✓ Reasonable worst case scenario of moderate to major flooding for a few quick response rivers, if greater than 3 1/2" of rainfall is realized.

For more details...See here for the latest [river forecasts](#), impact catalogs, and [inundation maps](#).

Official Forecast – Saddle River at Lodi



Probabilistic Forecast -- Saddle River at Lodi

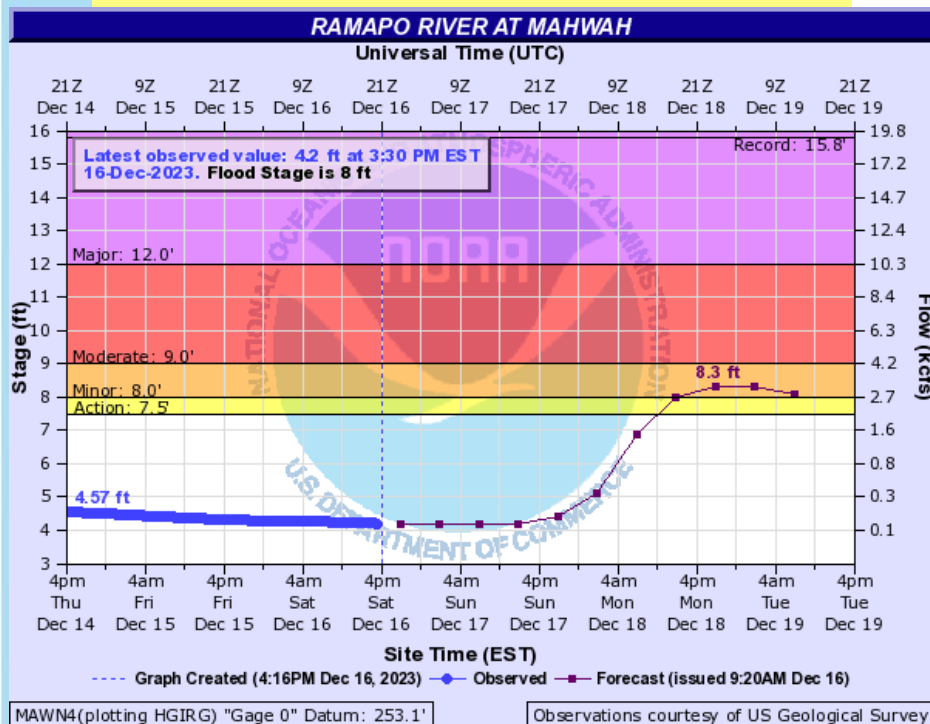


Northeastern NJ River Flooding Potential

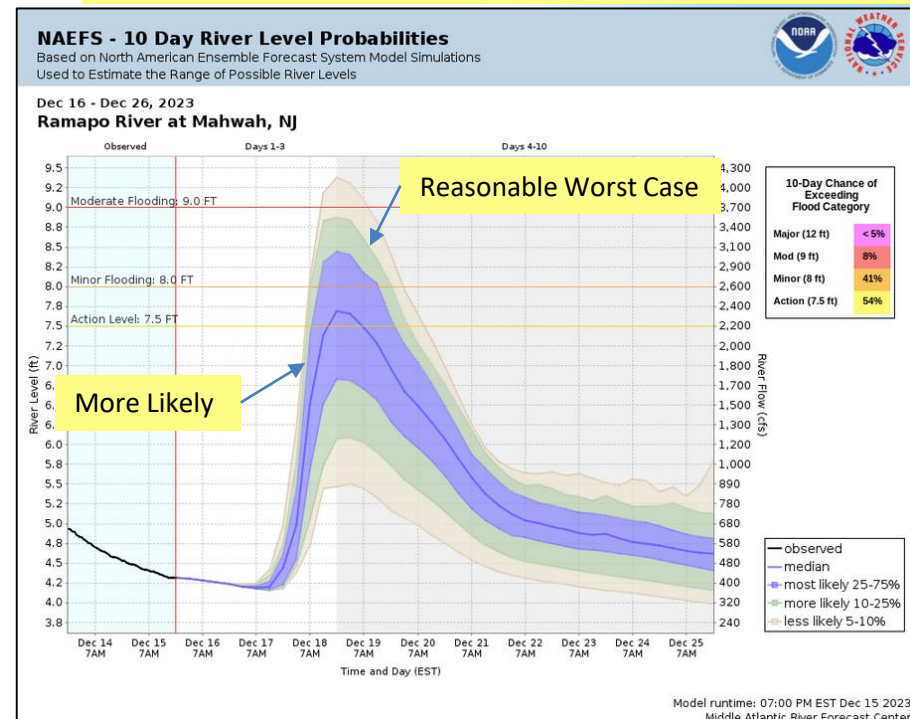
- ✓ **Minor to moderate flooding likely along several quick responding small rivers and streams of NE NJ.**
- ✓ Reasonable worst case scenario of moderate to major flooding for a few quick response rivers, if greater than 4" of rainfall is realized.

For more details...See here for the latest [river forecasts](#), impact catalogs, and [inundation maps](#).

Official Forecast – Ramapo River at Mahwah NJ



Probabilistic Forecast - Ramapo River at Mahwah NJ

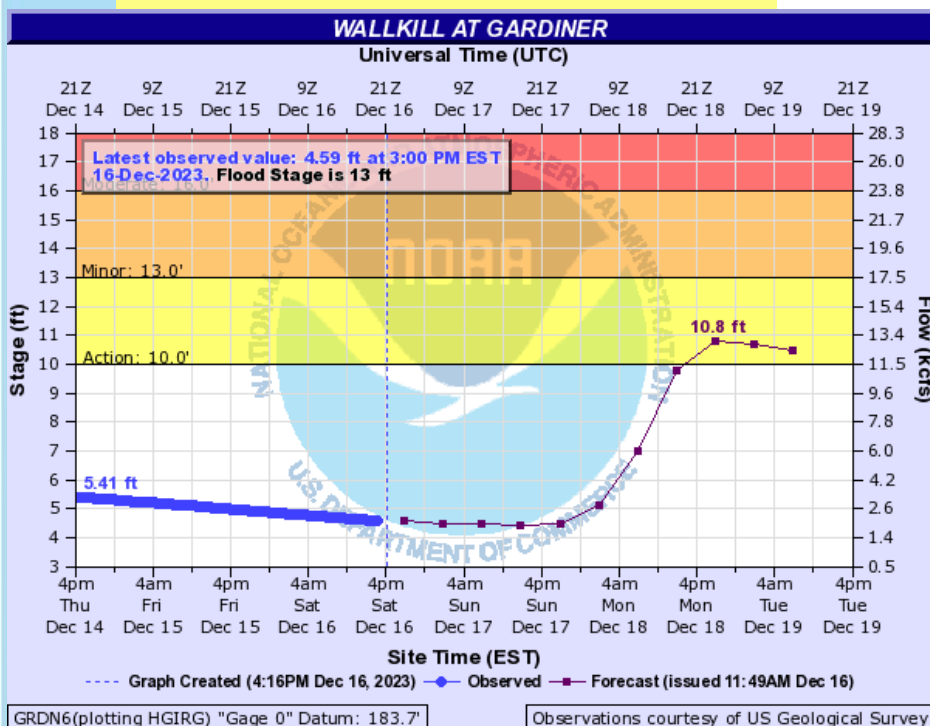


Lower Hudson Valley River Flooding Potential

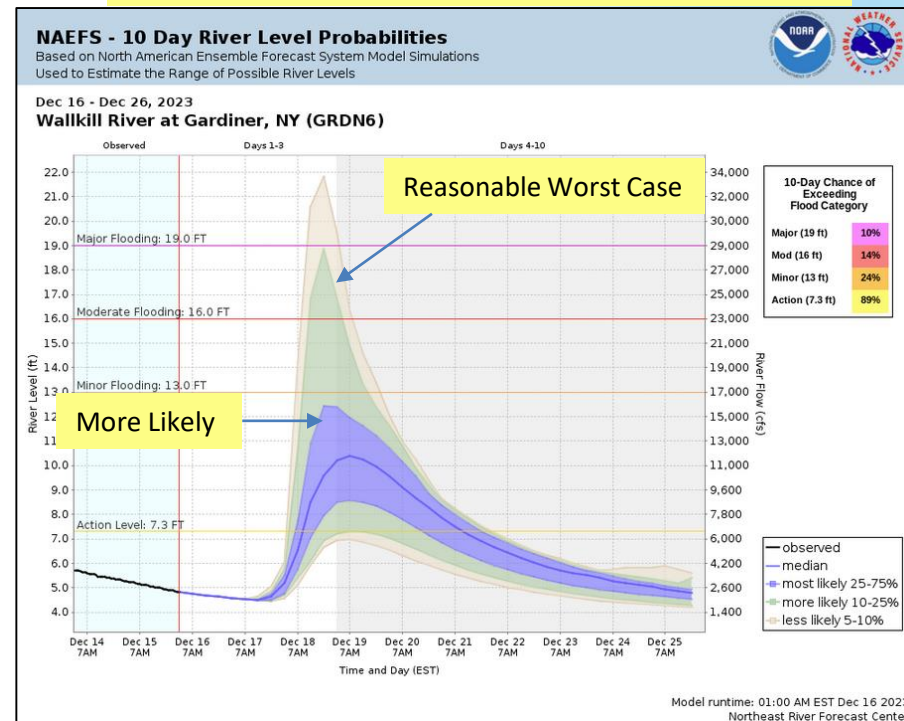
- ✓ Minor flooding likely along a few quick responding small rivers and streams, particularly Westchester County.
- ✓ **Reasonable worst case scenario of moderate flooding for a few quick response rivers, if greater than 3 1/2" of rainfall is realized.**

For more details...See here for the latest [river forecasts](#) and impact catalogs.

Official Forecast – Wallkill at Gardiner NY



Probabilistic Forecast – Wallkill at Gardiner NY

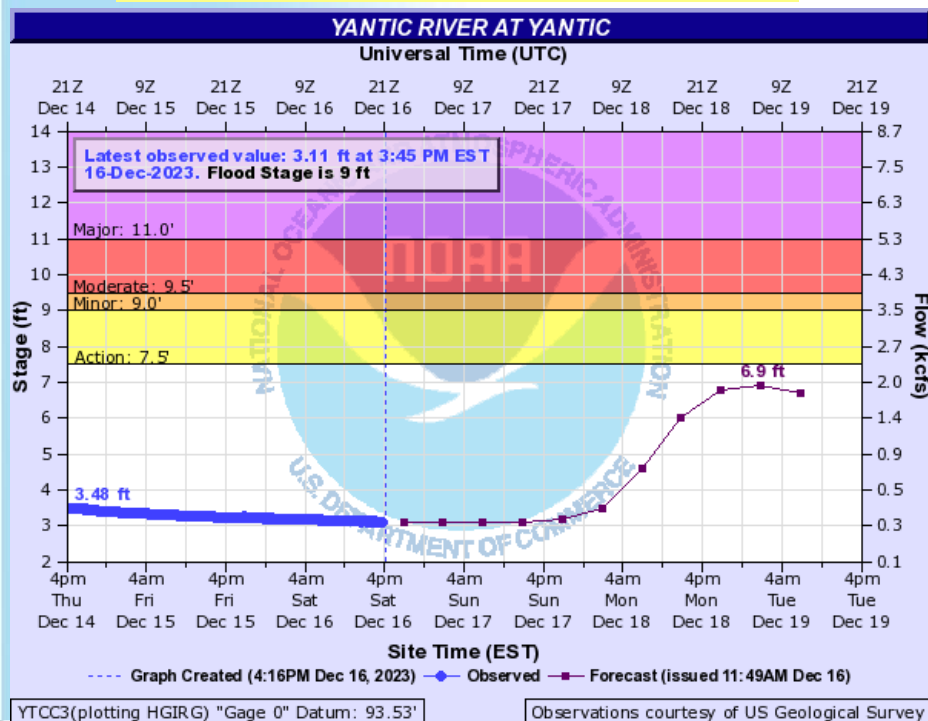


Southern CT River Flooding Potential

- ✓ Minor flooding likely along a few quick responding small rivers and streams, particularly southwestern CT.
- ✓ **Reasonable worst case scenario of moderate flooding for a few quick response rivers, if greater than 3 ½" of rainfall is realized.**

For more details...See here for the latest [river forecasts](#) and impact catalogs.

Official Forecast – Yantic River at Yantic CT

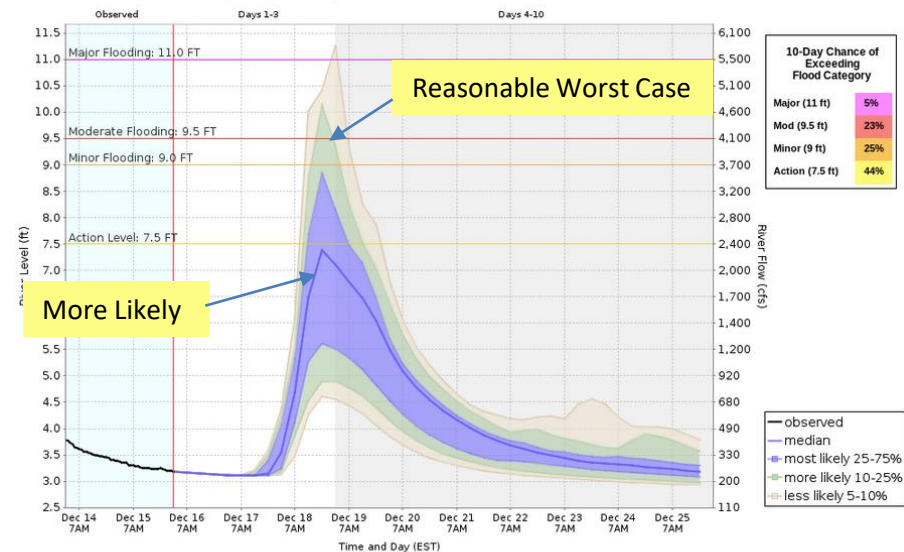


Probabilistic Forecast – Yantic River at Yantic CT

NAEFS - 10 Day River Level Probabilities

Based on North American Ensemble Forecast System Model Simulations
Used to Estimate the Range of Possible River Levels

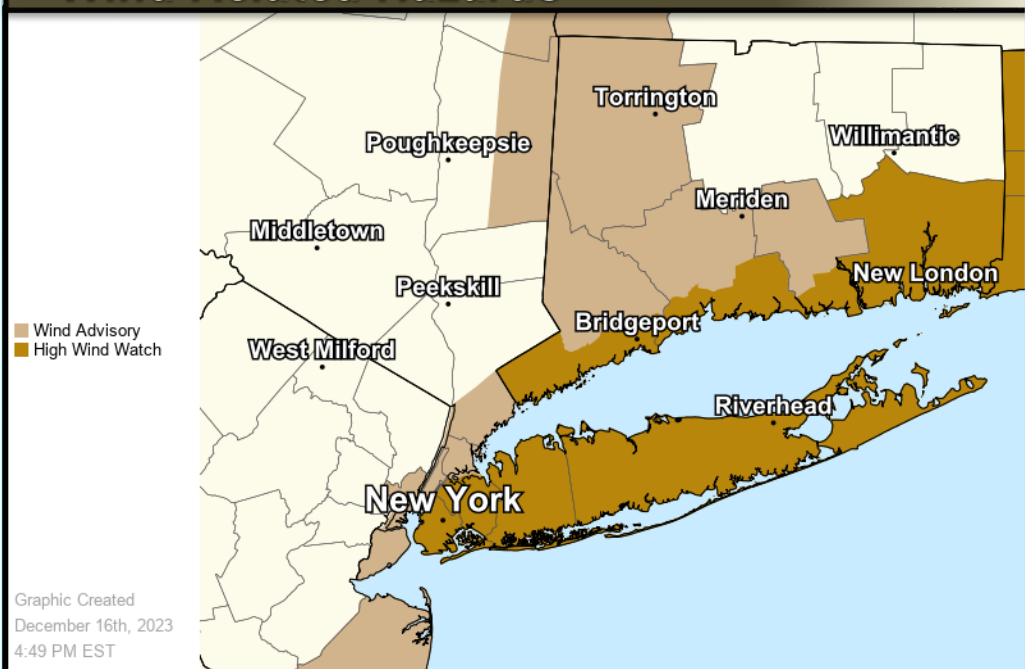
Dec 16 - Dec 26, 2023
Yantic River at Yantic, CT (YTCC3)



Model runtime: 01:00 AM EST Dec 16 2023
Northeast River Forecast Center

Strong to Damaging Winds

Wind Related Hazards



Forecast Challenges:

Model consensus has trended slightly farther west, increasing the potential for a period of strong to damaging winds along the coast Sun Night thru Mon Morn.

Saturated soils may increase the downed tree impacts.

Hazards and Impacts:

High Wind Watch – Much of the coast

- ✓ **Peak Winds:** South to southeast winds of 25 to 40 mph with gusts 55 to 60 mph likely. Highest across Long island and southeastern CT. These strongest winds will likely be for a 4 to 6 hour period overnight Sunday into Monday morning.
- ✓ **Impacts:** Numerous tree limbs will likely be downed, as well as scattered trees and power lines. Scattered power outages likely. Poorly secured outdoor objects will be damaged or blown away.

Wind Advisory

- ✓ **Peak Winds:** South to southeast winds of 20 to 30 mph with gusts 40 to 50 mph.
- ✓ **Impacts:** Scattered tree limbs will likely be downed, as well as isolated trees and power lines. A few power outages possible. Poorly secured outdoor objects will be damaged or blown away.

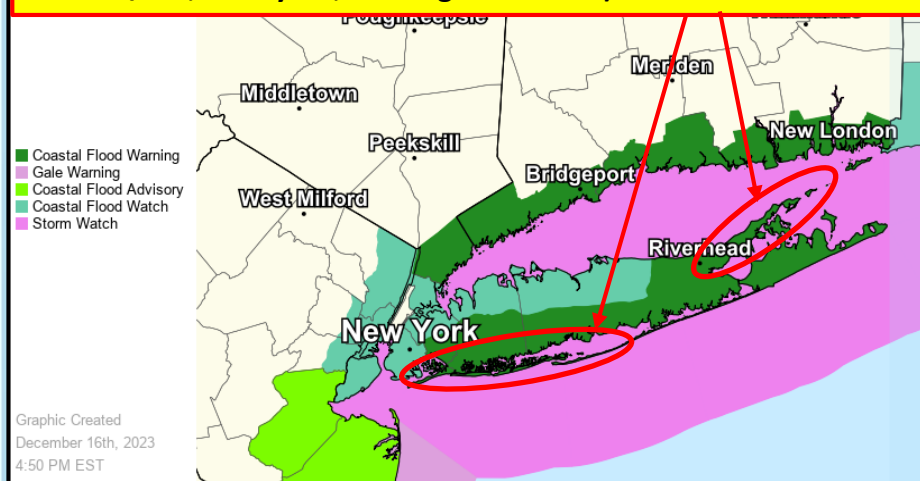
Timing

- ✓ Sunday evening through Monday morning.

Coastal Flooding Hazard and Impacts

Marine / Coastal Hazards

Greatest threat areas for widespread moderate to locally major coastal flooding during Monday morning high tide (inundation of 2 to 2 1/2 ft, locally 3ft, above ground level)



For the latest coastal flood forecasts (hydrographs and tables) and the tools to visualize the potential coastal impacts (zoomable potential inundation map, impact catalogs, climatology, etc.) in your area of concern please see to the [NWS New York, NY Coastal Flooding Page](#)

Forecast Challenges: Peak surge of 3 1/2 to 5 ft will likely be between high tidal cycles Monday morning. The timing of windshift late Monday morning versus early Monday afternoon will be critical for potential of major flooding (3 ft of inundation above ground. This may not be evident until Monday morning. Heavy rainfall and/or runoff coinciding the Sunday Night and Monday afternoon high tide will exacerbate street and property flooding along the coast and tidally affected rivers

Monday afternoon high tide

- ✓ **Coastal Flood Warning areas:** Widespread moderate (2 to 2 1/2 ft above ground) coastal flooding expected for S Queens, S Nassau and SW Suffolk, LI twin forks, coastal Westchester and much of coastal CT. **Potential for locally major coastal flooding (3 ft above ground) for the circled areas if wind shift occurs near or after the time of high tide.**
 - ✓ **Impacts** Numerous low-lying and shoreline roads are likely to be closed in the affected area, with adjacent properties taking on water. Scattered flooding of basements and first floors of low-lying residence possible. Cars will likely be damaged if not moved to higher ground. Flooding will also extend inland from the waterfront along tidally affected rivers.
- ✓ **Coastal Flood Watch areas:** Minor to moderate coastal flooding (up to 2 ft above ground) likely for vulnerable areas along NY/NJ harbor, western LI Sound, and tidally affected rivers, particularly Hackensack and Hudson Rivers.
 - ✓ **Impacts** Scattered low-lying and shoreline roads are likely to be closed in the affected area, with adjacent properties taking on water. Isolated flooding of basements and first floors of low-lying residence possible. Cars may be damaged if not moved to higher ground. Flooding will also extend inland from the waterfront along tidally affected rivers. Flooding will also extend inland from the waterfront along tidally affected rivers.

Shoreline Hazards and Impacts:




- ✓ **12-16' breaking waves along the oceanfront, resulting in widespread dune base erosion and scattered overwashes with Mon afternoon high tide.**
- ✓ 3 to 5' along coastal CT, and 4 to 8' along Orient Point shoreline resulting in beach erosion, localized overwashes, and possible damage to shoreline structures with Mon early PM high tide.

Timing:

- ✓ Minor flooding possible during the times of high tide Sunday Night. Widespread moderate likely, locally major possible, around and near the times of high tide Mon afternoon.



Coastal Flooding Thresholds

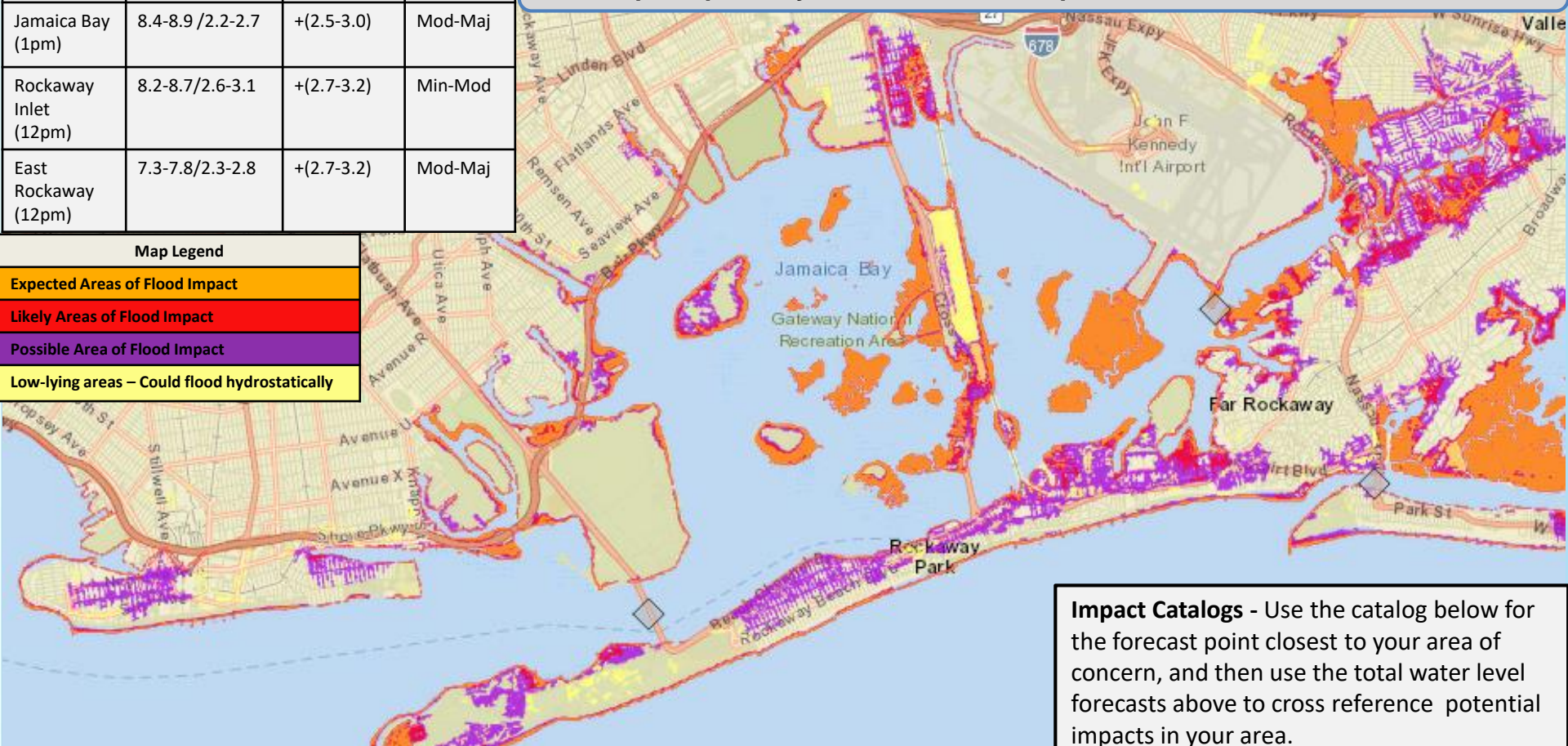
	Minor (CF Advisory)	Moderate (CF Warning)	Major (Warning)
Picture	 Westport	 Lindenhurst	 New Haven
Hazard	<ul style="list-style-type: none"> • Low threat of property damage...and no direct threat to life. • 1 to 2 ft of inundation in shoreline and vulnerable areas. 	<ul style="list-style-type: none"> • Elevated threat of property damage...with a risk to life if one places themselves in unnecessary danger. • 2 to 3 ft of inundation in shoreline and vulnerable areas. • Minor to no inundation of surrounding coastal communities. 	<ul style="list-style-type: none"> • Significant threat to life and property. • 3-5+ ft of inundation in shoreline and other vulnerable areas. • Minor to moderate inundation (1 to 3 ft) of surrounding coastal communities that rarely experience coastal flooding.
Impact	<ul style="list-style-type: none"> • A few shoreline and vulnerable roadways and adjacent properties will experience shallow flooding. 	<ul style="list-style-type: none"> • Several shoreline and vulnerable area home and businesses will experience water inside. • Several low-lying coastal and shoreline roads will be closed. • A few cars may take on water or even be destroyed. 	<ul style="list-style-type: none"> • Evacuations will be necessary for the most vulnerable shoreline and coastal areas. • Many coastal communities will experience damage...with some shoreline and flood prone homes and businesses being destroyed. • Many cars will likely be submerged or washed away. • Several sections of nearshore roads and escape routes will be impassable and a few could be washed out. • Flood waters may extend well inland in low lying areas.



Coastal Flooding – Potential Flood Impact Areas

Forecast Location (High tide Time)	Peak Water Level (ft) (MLLW/MHHW)	Departure at high tide (ft)	Flood Impact
Jamaica Bay (1pm)	8.4-8.9 / 2.2-2.7	+(2.5-3.0)	Mod-Maj
Rockaway Inlet (12pm)	8.2-8.7 / 2.6-3.1	+(2.7-3.2)	Min-Mod
East Rockaway (12pm)	7.3-7.8 / 2.3-2.8	+(2.7-3.2)	Mod-Maj

The map below shows the potential extent of flood impact (water above ground) during the Monday afternoon high tides. Flooding will likely be as deep as 2 to 2 ½ ft in spots, possibly as much as 3 ft in spots.



Map Legend
Expected Areas of Flood Impact
Likely Areas of Flood Impact
Possible Area of Flood Impact
Low-lying areas – Could flood hydrostatically

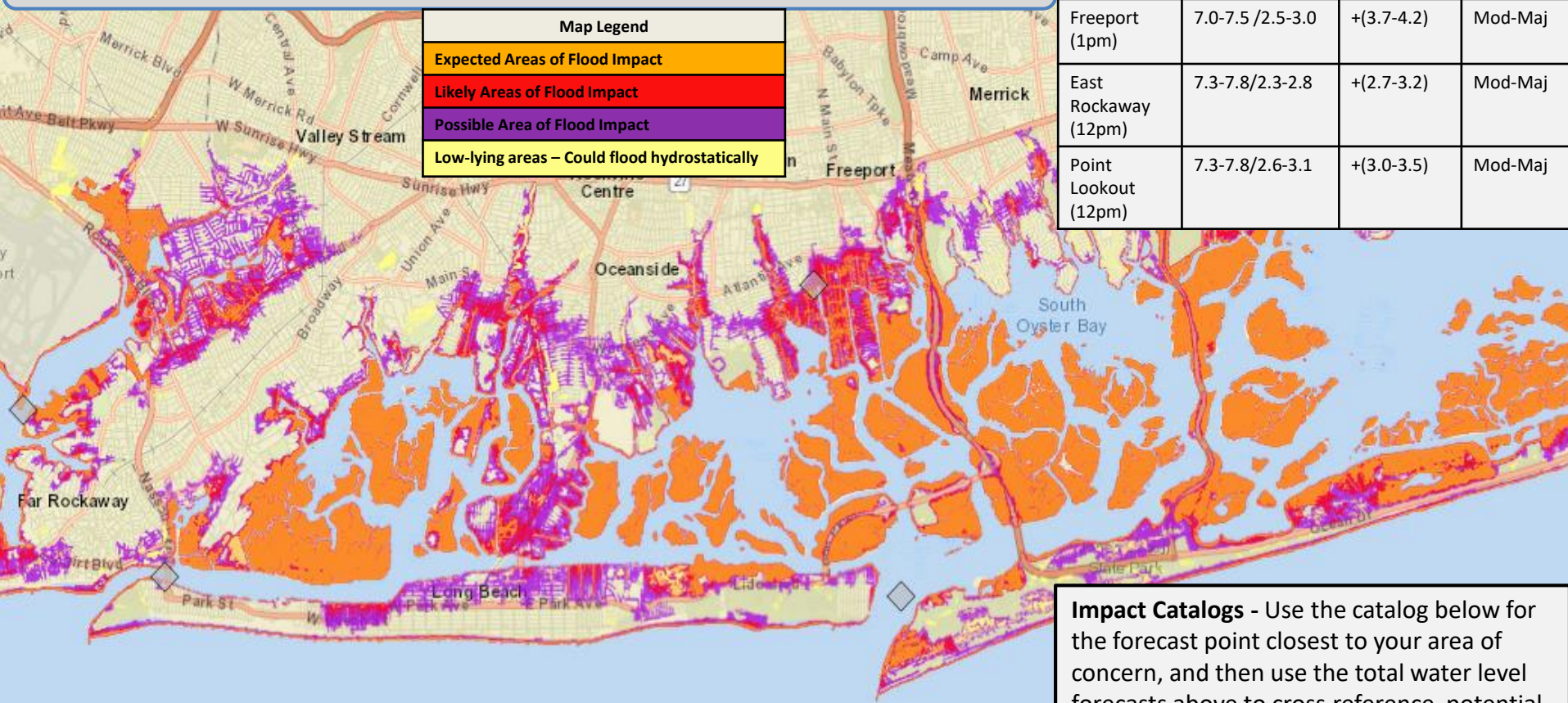
Impact Catalogs - Use the catalog below for the forecast point closest to your area of concern, and then use the total water level forecasts above to cross reference potential impacts in your area.

- [Jamaica Bay at Inwood](#)
- [East Rockaway](#)
- [Rockaway Inlet](#)

For the latest coastal flood forecasts (hydrographs and tables) and the tools to visualize the potential coastal impacts (zoomable potential flood impact map, impact catalogs, climatology, etc.) in your area of concern please go to the [NWS New York, NY Coastal Flooding Page](#)

Coastal Flooding – Potential Flood Impact Areas

The map below shows the potential extent of flood impact (water above ground) during the Monday morning high tides. Flooding may be as deep as 2 to locally 3 ft in spots.



Impact Catalogs - Use the catalog below for the forecast point closest to your area of concern, and then use the total water level forecasts above to cross reference potential impacts in your area.

- [Freeport](#)
- [East Rockaway](#)
- [Point Lookout](#)

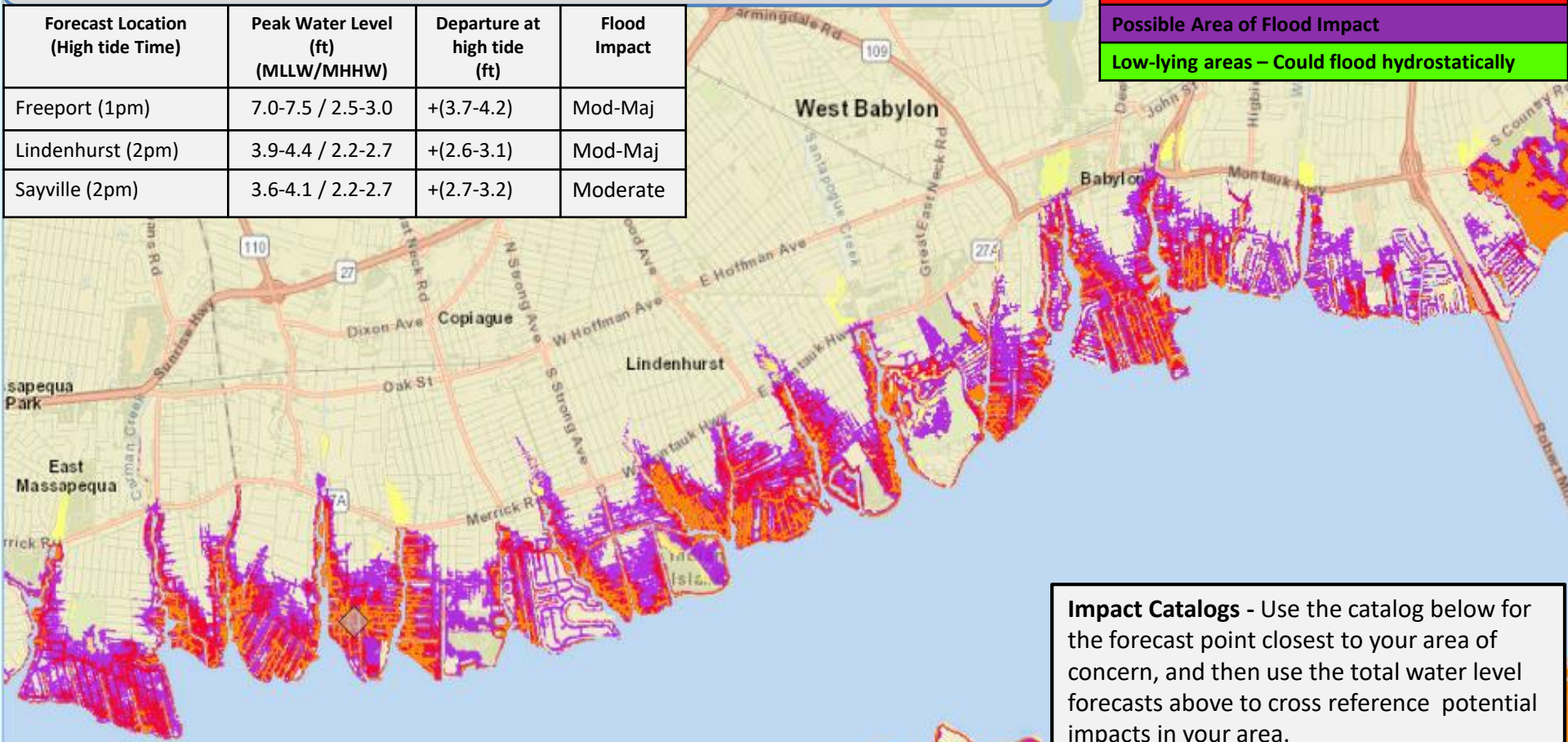
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Forecast Location (High tide Time)	Peak Water Level (ft) (MLLW/MHHW)	Departure at high tide (ft)	Flood Impact
Freeport (1pm)	7.0-7.5 / 2.5-3.0	+(3.7-4.2)	Mod-Maj
Lindenhurst (2pm)	3.9-4.4 / 2.2-2.7	+(2.6-3.1)	Mod-Maj
Sayville (2pm)	3.6-4.1 / 2.2-2.7	+(2.7-3.2)	Moderate

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Likely Areas of Flood Impact
Possible Area of Flood Impact
Low-lying areas – Could flood hydrostatically



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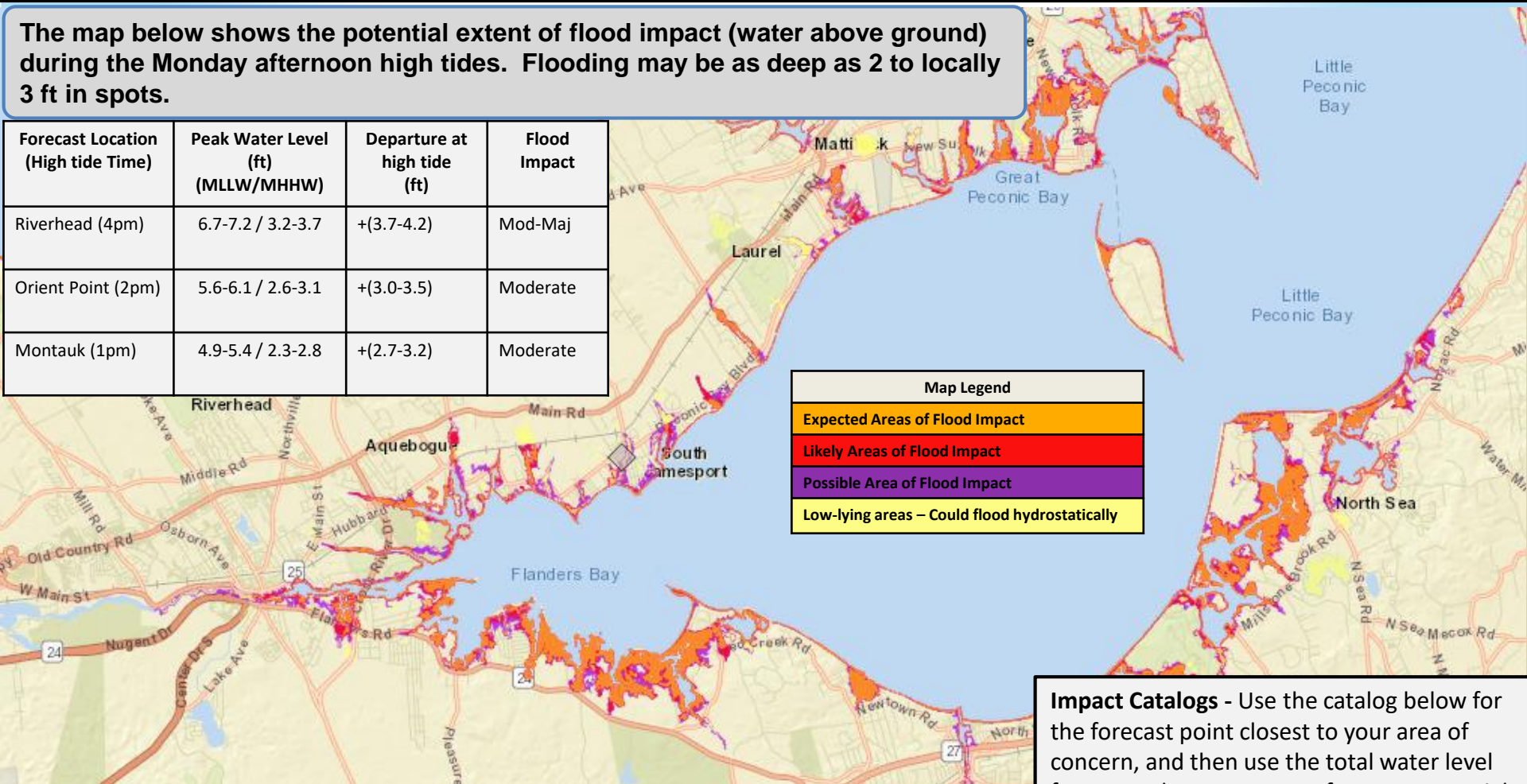
- [Freeport](#)
- [Lindenhurst](#)
- [Watch Hill](#)

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Forecast Location (High tide Time)	Peak Water Level (ft) (MLLW/MHHW)	Departure at high tide (ft)	Flood Impact
Riverhead (4pm)	6.7-7.2 / 3.2-3.7	+(3.7-4.2)	Mod-Maj
Orient Point (2pm)	5.6-6.1 / 2.6-3.1	+(3.0-3.5)	Moderate
Montauk (1pm)	4.9-5.4 / 2.3-2.8	+(2.7-3.2)	Moderate



Map Legend
Expected Areas of Flood Impact
Likely Areas of Flood Impact
Possible Area of Flood Impact
Low-lying areas – Could flood hydrostatically

Impact Catalogs - Use the catalog below for the forecast point closest to your area of concern, and then use the total water level forecasts above to cross reference potential impacts in your area.

- [Riverhead](#)
- [Orient Point](#)
- [Montauk](#)

For the latest coastal flood forecasts (hydrographs and tables) and the tools to visualize the potential coastal impacts (zoomable potential flood impact map, impact catalogs, climatology, etc.) in your area of concern please go to the [NWS New York, NY Coastal Flooding Page](#)

Event Summary

- ✓ Widespread 2 to 3", locally 4" of rain likely late Sun into Mon Morning. Widespread minor urban, poor drainage and riverine flood threat likely for late Sunday thru Monday morning, with isolated flash flood threat.
- ✓ Threat for moderate flooding of quick responding rivers remains. Low threat for major flooding if high end of rainfall amounts are realized.
- ✓ Southerly winds 30 to 40 mph with gusts 55 to 60 mph likely for the coast late Sunday Night into Monday, causing scattered tree and power impacts.
- ✓ Threat for widespread moderate coastal flooding (2 to 2 ½ ft inundation above ground) for vulnerable coastal communities for the Monday afternoon high tide. Locally major (around 3 ft inundation above ground) is possible.
- ✓ 12 to 16 ft breaking surf causing widespread dune erosion and scattered overwashes likely for the ocean beachfront.
- ✓ Storm conditions likely on all waters Sunday Night through Monday